# Title: TRANSPARENT AMORPHOUS CARBON STRUCTURE IN SEMICONDUCTOR DEVICES

#### IN THE SPECIFICATION

Please amend the specification as follows:

## Please amend the paragraph beginning at page 2, line 10 as follows:

FIG. 1B is graph showing an absorption extinction coefficient (k) at an exemplary wavelength versus deposition temperature of a transparent amorphous carbon layer according to an embodiment of the invention.

### Please amend the paragraph beginning at page 2, line 13 as follows:

FIG. 1C is graph showing an absorption extinction coefficient (k) at exemplary temperatures versus range of wavelengths of a transparent amorphous carbon according to an embodiment of the invention

#### Please amend the paragraph beginning at page 4, line 3 as follows:

In this specification, the amorphous carbon layer is transparent in visible light range means that the amorphous carbon layer has a substantially low absorption extinction coefficient (k) in which k has a range between about 0.15 and about 0.001 at wavelength of 633 nm. In some embodiments, the amorphous carbon layer transparent in visible light range is an amorphous carbon layer formed at a temperature from about 150°C to about 500°C such that the amorphous carbon layer has an absorption extinction coefficient (k) between about 0.15 and about 0.001 at wavelength of 633 nm.

#### Please amend the paragraph beginning at page 5, line 14 as follows:

In box 106, an amorphous carbon layer is formed as a deposited layer over the wafer. The amorphous carbon layer is transparent in visible light range. In some embodiments, the amorphous carbon layer formed by method 100 has an absorption extinction coefficient (k) between about 0.15 and about 0.001 at wavelength of 633 nm.

#### Please amend the paragraph beginning at page 6, line 10 as follows:

FIG. 1B is graph showing absorption extinction coefficient (k) at an exemplary

Filing Date: February 27, 2004
Title: TRANSPARENT AMORPHOUS CARBON STRUCTURE IN SEMICONDUCTOR DEVICES

Page 3 Dkt: 303.885US1

wavelength versus deposition temperature of a transparent amorphous carbon layer according to an embodiment of the invention. In some embodiments, the graph of FIG. 1B shows the absorption extinction coefficient of the transparent amorphous carbon layer formed according to the method described in FIG. 1A.

### Please amend the paragraph beginning at page 6, line 15 is amended as follows:

In FIG. 1B, curve 150 shows the transparent amorphous layer having an absorption extinction coefficient k ranging from about 0.15 to about 0.001 at wavelength of 633 nm when the transparent amorphous layer is formed (or deposited) at a temperature from about 150°C to about 500°C. In FIG. 1B, curve 150 has an exemplary shape. In some embodiments, curve 150 may have a shape different from the shape shown in FIG. 1B.

### Please amend the paragraph beginning at page 6, line 21 is amended as follows:

FIG. 1C is graph showing absorption extinction coefficient (k) at exemplary temperatures versus a range of wavelengths of a transparent amorphous carbon according to an embodiment of the invention. In some embodiments, the graph of FIG. 1C shows the absorption extinction coefficient of the transparent amorphous carbon layer formed according to the method described in FIG. 1A.

## Please amend the paragraph beginning at page 6, line 26 is amended as follows:

In FIG. 1C, curve 161 shows absorption extinction coefficient (k) versus a range of wavelengths of a transparent amorphous carbon formed at an exemplary temperature of 375°C. Curve 162 shows absorption extinction coefficient versus a range of wavelengths of another transparent amorphous carbon formed at an exemplary temperature of 225°C.

# Please amend the paragraph beginning at page 9, line 8 is amended as follows:

Amorphous carbon layer 430 has a thickness T4. T4 can be any thickness. In an embodiment, T4 has a thickness of about 1500 Angstroms. In another embodiment, T4 has a thickness of about 2000 Angstroms. In some embodiments, T4 is at least 4000 Angstroms. In various embodiments, T4 has a thickness that ranges from about 1000 Angstroms to about 12000

Page 4 Dkt: 303.885US1

Filing Date: February 27, 2004
Title: TRANSPARENT AMORPHOUS CARBON STRUCTURE IN SEMICONDUCTOR DEVICES

Angstroms. Amorphous carbon layer 430 has a low absorption coefficient such that amorphous carbon layer 430 is transparent in visible light range. In some embodiments, amorphous carbon layer 430 has an absorption extinction coefficient (k) between about 0.15 and about 0.001 at wavelength of 633 nm.

### Please amend the paragraph beginning at page 15, line 3 as follows:

FIG. 13 shows memory device 1100 after an amorphous carbon layer 1330 is formed over device structure 1220. Amorphous carbon layer 1330 has a low absorption coefficient such that amorphous carbon layer 1330 is transparent in visible light range. In some embodiments, amorphous carbon layer 1330 has an absorption extinction coefficient (k) between about 0.15 and about 0.001 at wavelength of 633 nm. Amorphous carbon layer 1330 may be formed by a method similar to method 100 described in FIG. 1A.